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A TECHNIQUE FOR GATHERING CHILDREN'S LANGUAGE SAMPLES FROM NATURALISTIC SETTINGS.

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A MAIN CONCERN OF THE 2 STUDIES DESCRIBED IN THIS PAPER WAS TO DEVELOP A METHOD OF COLLECTING LANGUAGE SAMPLES OF CHILDREN. IN THE BELIEF THAT LANGUAGE SHOULD BE STUDIED AS A PART OF SOCIAL INTERACTION, THE CHILDREN'S SPEECH WAS RECORDED AS IT WAS BEING USED IN FAMILAR HOME AND SCHOOL SETTINGS. IN THE FIRST STUDY (TO AVOID INTRODUCING ALIEN ELEMENTS WHICH MIGHT HAVE MODIFIED NORMAL LANGUAGE) A TRANSMITTER WITH AN INTERNAL MICROPHONE WAS CONCEALED INSIDE A 3-YEAR-OLD CHILD'S CLOTHING. HE COULD MOVE ABOUT FREELY AS HIS CONVERSATIONS WERE BROADCAST TO A BATTERY-OPERATED RADIO AND RECORDED ON A TAPE RECORDER. IN THE SECOND STUDY, NURSERY SCHOOL SUBJECTS (AGED 4), EACH WORE A SMALL POCKETBOOK CONTAINING A TRANSMITTER. A MICROPHONE WAS CLIPPED TO THE POCKETBOOK'S SHOULDER STRAP, ABOUT 6 INCHES FROM THE CHILD'S MOUTH. FIVE MINUTE SPEECH SAMPLES WERE RECORDED EVERY 20 MINUTES OVER 2 MORNINGS FOR EACH CHILD. SOUNDS WERE TRANSMITTED TO A TUNER AND TAPED. AN ADVANTAGE OF THE METHODS OF COLLECTING LANGUAGE SAMPLES USED IN THESE STUDIES IS THAT THE RECORDINGS HAVE A POINT OF VIEW, WITH THE CHILD'S SPEECH RELATED TO ANOTHER PERSON'S. TRANSCRIPTS OF THE LANGUAGE SAMPLES ARE INCLUDED. THIS PAPER WAS PRESENTED AT THE BIENNIAL MEETINGS OF THE SOCIETY FOR RESEARCH IN CHILD DEVELOPMENT (NEW YORK CITY, MARCH, 1967). (MS)

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A TECHNIQUE FOR GATHERING CHILDREN"S LANGUAGE SAMPLES FROM NATURALISTIC SETTINGS[1]

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The two studies described in this paper evolved in part from a behavioral orientation to language and in part from a common concern over the nature of the data from which generalizations about language in young children have been made. Although the techniques to be discussed were developed independently, they are, in fact, very similar. Thus, we are presenting our experiences jointly.

Our orientation is to language as a social phenomenon, and thus as a set of behaviors primarily learned in a social environment. Since language--verbal behavior--is something one does rather than has, one cannot study it independent of its behavioral environment--social interactions.

This view requires that if, for example, one wishes to study the child learning to speak, then the appropriate place to gather one's data is in the child's home, in his school, in the streets, or wherever it is that one can observe him learning to speak. And because verbal behavior, like most social behaviors, is particularly sensitive to and easily modified by novel or alien elements in an ordinarily familiar environment, it is necessary to use observation and monitoring techniques which are as non-intrusive as possible.

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1 A paper presented at the Biennial Meetings of the Society for Research in Child Development, New York City, March 1967.
2 Research done while on the staff of the Institute for Developmental Studies, New York University.
3 Research done as part of doctoral thesis, Verbal Behavior Laboratory, Department of Languages and Linguistics, University of Rochester.

If one wishes to study the formal features of children's language, then different techniques may be appropriate. The traditional formal topographical approach concerns itself principally with analyses of transcribed texts. A behavioral approach, however, must concern itself with the quantity and quality of social interactions, with a particular focus on the verbal components. Thus, a language sample elicited in any of the traditional manners--i.e., telling a story about a picture or a toy, speaking with an interviewer, taking a vocabulary test, reading, etc.--while it may serve the purposes of formal description, is only one instance of a single social interaction, and cannot be assumed to be characteristic of the range and flexibility of a child's verbal repertoire in all social situations.

It is our feeling that once one moves beyond a concern with topographical characteristics of language, the kind of data one collects becomes vastly more critical; that if one takes the "social interaction" point-of-view, one is obliged to gather samples in naturalistic settings. Ideally, nothing short of multi-view audio-video recordings will suffice to provide an adequate record. However, the present state of our technology does not permit such records to be obtained unobtrusively. For the moment, the best our technology can offer are devices small enough and reliable enough to allow for the non-obtrusive monitoring of acoustic signals over fairly extended periods of time.

The following are two attempts to study the natural language ecologies of young children. Horner's study was an examination of the verbal ecology of the lower-class-three-year-old's home; Sher's examined

verbal interactions in a prekindergarten classroom for lower-class four-year-olds.

In the first study, a small, wireless PM transmitter (Kinematix-IMP II) with an internal microphone was mounted inside the clothing of a three-year old child. The transmitter broadcast to an PM radio, the output of which was fed into a Concord 350 tape recorder, with self-reversing reels. To insure maximum flexibility of placement, the equipment was completely battery operated and housed in a small suitcase. Once the equipment has been placed in an unobtrusive spot in the house, the investigator was free to leave the setting for six to seven hours (i.e., until the tapes had to be changed). Meanwhile the child, wearing the "bugged" clothing, was able to move about normally. Acoustic signals which occurred within the immediate vicinity of the child were picked up, as long as the child was within range of the receiver.

The important feature of this procedure is that it provides recordings with a point-of-view. The central signal picked up is that of the individual who is the focus of interest--in this case, the child--and other signals are recorded in positional relation to that individual.

The following tape selections from Horner's investigation provide some notion of the quality, type and range of the data collected. In the first sample, the mother is about to go out shopping. John, the little boy, wants to go with her and has been told he cannot go. He is pouting, and consequently his voice is very low, in contrast with that of his mother, who is virtually shouting.

Tape Sample #1 [4]

The second sample is the same child going next door to find his brother, Reggie.

Tape Sample #2 [5]

Sher's study focussed on gathering speech samples from normal interactions in the course of a morning in a pre-kindergarten class. This study represents a somewhat more controlled setting than Horner's, in that: 1) the routines and equipment available to the children are relatively stable from day to day, and 2) the investigator was able to directly observe the children through a one-way glass while they engaged in their activities. By using a multi-track recorder, she was able to record her observations simultaneously with the recordings of the children.

In this study, the subjects wore a small pocketbook containing a Kinematix-IMP II transmitter, utilizing a professional quality microphone (RCA BK-12A) the size of a lipstick case. The microphone was clipped to the shoulder strap of the pocketbook about six inches from the child's mouth. The acoustic signals were transmitted to a KLH 18-PM tuner and taped on one track of a Tandberg stereo, 4-track tape recorder. Five-minute timed samples of speech were recorded every twenty minutes over two mornings for each child.

Again, the individual who was the focus of interest was free to move naturally about his environment, yet clear recordings could be made

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4 See Appendix A.

5 See Appendix A.

of his interactions, including the speech of both the subject and those interacting with him.

The following tape sample will serve to demonstrate the range and fidelity of the data collected in Sher's study. The child here is role-playing with the teacher in the doll corner. They are shuttling between the sink and the telephone.

Tape Sample #3 [6]

Systematic studies of language in naturalistic settings have been relatively few. This has been so in part because of the technical problems of gathering data and in part because of the methodological problems involved in handling the massive amounts of language data produced. The studies described in this paper are addressed primarily to the technical problems of data gathering. Today these problems are much less cumbersome and forbidding than they were ten years ago when the pioneering work in verbal ecology was done with adults by William Soskin and Vera John.[7] By now, developments in electonics have minimized the technical problems, and provided us with a technology particularly well suited to the study of children's verbal interactions.

The methodological problems, however, are still very much with us. We now have an advanced technology, while our methodology is still in its infancy. The authors of this paper, among others, are attempting to develop methodologies which will make it possible to account for language in its natural environment. And although we are far from being able to offer final answers at this point, we are convinced that answers

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6 See Appendix B

7 Soskin, William, and Vera P. John, "A study of spontaneous talk." In Barker, R.G. (Ed.) The Stream of Behavior, New York: Appleton-Century Crofts, 1963.

will be forthcoming. Further, we are optimistic about the potential of studying the language ecologies of children as a means of obtaining baseline data on functional language. Such information, in addition to suggesting possible dimensions for intervention programs for disadvantaged children, directs itself as well to the broader and more fundamental question of what environmental factors are important to language development in all children.

APPENDIX A
SAMPLE ONE

CONTEXT COMMENTS	PERSON INTERACTING WITH CHILD	CHILD	BACKGROUND TALK
Scene: Saturday morning - Mother is getting ready to go downtown shopping. John wants to go along and has been told he can't. He is pouting.	Mother: Did you take care of your_____a while ago?	John: (very softly) I want to go with you.	
	Mother: Maybe when I come back, if I have to do another errand you can go with me. And then you can go with Daddy tomorrow and pick up Reggie's birthday cake. And things like that. I say Mama's gonna be so busy running, Honey. Where did I _____those shoes? _____those sneakers in there by your bed.		
Dorie is John's 11-year-old sister.		John: (sniffling) Why's Dorie going?	
	Dorie: 'Cause I could help her.		
	Mother: (raising her voice) Now don't get mad! If you do, you won't go with me tomorrow. Or Daddy tomorrow--_____ all go.		
Reggie is John's 6-year-old brother.		Reggie: (from a distance) See, you keep this ____top _____. Take this off?	
		Mother: Yeah.	
		John: You said I could go-----	

CONTEXT COMMENTS	PERSON INTERACTING WITH CHILD	CHILD	BACKGROUND TALK
	Mother: (shouting) I said maybe! Didn't I? Didn't I?		
		John: (pouting) Yeah---	
	Mother: Well, I can't take a whole_____, I got too much to do. Now, if you stay on and play with Reggie then you can go with Daddy will take you somewhere maybe when I come back --if you ask him. Now Mama gonna have too much to do -- she got too much already to do. And I can only do so much and I can't have too many of you with me. 'Cause I would be worried by "Look, Mama! See this, Mama" and all that and Mama ain't got time to do all that today. And if I take you, I like to spend some time with you -- and let you look around. But I can't do that today. My time is too limited. I gotta get back home, in other words, and get some-thing else done. Clean up for the party to-morrow and stuff like that. You want to help me clean when I come back?		
Softening voice			
		John: (whining) No.	
	Mother: See? That's something you don't want to do.		
			Reggie:_____ want to go.

CONTEXT COMMENTS	PERSON INTERACTING WITH CHILD	CHILD	BACKGROUND TALK
	Mother: Mama would love to take all of you, but I can't take all of you when I'm in a rush. Dorie can help me keep-- well, she can read some things, and she can go and find some things.		
	It's time for bath. John?		
		John: Hm?	
	Mother: It's time for bath.		
		John: No.	

SAMPLE TWO

CONTEXT COMMENTS	PERSON INTERACTING WITH CHILD	CHILD	BACKGROUND TALK
John has gone next door, ostensibly to find his 6-year-old brother, Reggie		John: Shirley is Reggie over there? My Daddy want him.	
	Shirley: (calling in distance) Reggie, your Daddy wants you.		
		John: He go--he was go--he go mountain climbing and says he mount this and he -- and --and he ain't. I saw his--I saw his-- I -- I wa came in the gate and see if Reggie was here, and --	
	Shirley: You didn't come over here looking for nothing?		
		John: I--yeah, I came over here looking for him.	
	Shirley: You did, huh?		

APPENDIX B

Rita and Teacher are playing in the doll corner.

R: IF THE PHONE RING AN', AN' IT'S MARY, TELL HER TO SHUT-UP.

T: Really?

R: YEAH?

T: Won't she get angry with me if I tell her to shut-up?

R: NO, SHE WON'T; SHE DOESN'T GET ANGRY WITH NOBODY.

T: She doesn't? Okay. Than I'll tell her, when the phone rings, to shut-up, right?

R: RING-A-RING-A-RING. PICK THAT UP AND SEE IF SHE'S MARY. (teacher picks up phone and Rita picks up the other phone) HELLO, THIS IS MARY.

T: Hello, Mary.

R: (aside to T) TELL HER TO SHUT-UP.

T: Oh, I'm sorry but you have to shut-up.

R: (aside to T) TELL 'ER SHE'S AN OLD, STUPID RAT.

T: You're an old, stupid, rat? (with question in her voice)

R: NOW. NOW. NOW, THROW THE TELEPHONE HARD. OKAY? (teacher puts down the phone) NOW, YOU WASH AND I'LL DRY. (teacher begins to put dishes in the sink; Rita comes over) NO, I'M SUPPOSED TO FIX THE LEAK.

T: Oh?

R: RING-A-RING-A-RING. (Rita picks up phone) HELLO, STUPID OLD RAT. GOOD-BYE-Y' (screaming).

T: Talk in a softer voice.

R: (softer) GOOD-BYE, YOU SHUT-UP GIRL. (puts down the phone and walks back to the teacher) OH BOY! IF THE PHONE TA' RING ONCE MORE, I'LL LET IT RING!

T: Are you drying them?

R: SURE, I AM.

T: ...and dry them. You talked an awful lot...

R: OH, LET IT RING, OKAY?

T: Yeah. (both Rita and the Teacher are drying dishes) Where do the dishes go?

R: I THINK WE SHALL PUT IT HERE. OKAY?

(Michael comes in dressed as a magician, mumbling magic words)
SHUT-UP MAGICIAN. (Rita pushes him away)
OH STUCK UP, SHUT-UP.
OH DEAR, DEAR, DEAR, DEAR! (raising voice with each word)

T: (still washing dishes) Is Mary coming to eat, tonight?

R: (drying dishes) NO.

T: When is she coming to see you?

R: SHE PROMISED ME SHE'S COMING TO SEE ME NEXT WEEK BUT I WON'T LET HER IN.

T: Why not?

R: 'CAUSE SHE'S A TERRIBLE GIRL AND SHE'S TALKS TOO MUCH. SHE THINKS SHE HAD A REAL DREAM AND SHE'S NOT.

T: She thinks she had a real dream?

R: YEAH. TODAY SHE CALLED ME UP BECAUSE SHE WAS CRYING; SHE WANTED TO TELL ME THAT I, I: SHE WANTED ME TO COME OVER AND HELP HER; BECAUSE, UM, MONSTER COME AND I CAN'T DO THAT ! (with indignation in her voice)

T: No, I guess not.

R: MAYBE SHE COULD CALL. WOO-WOO (picks up telephone) HELLO, THIS IS MARY. (silence) GEE, WHEN IS MARY GOIN'TA SHUT UP? (screams at all children)

T: Why don't you ask her what she wants? Maybe she won't call anymore. I'll finish the dishes and you talk to her, okay?

R: OH, NO IT'S NO THANK YOU (interrupts)

T: Maybe she won't call anymore if you talk to her.

R: I KNOW.

T: Why don't you call her and talk to her?...